

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A method of printing a solder paste onto a substrate surface, the method comprising:

- (a) placing a stencil over the substrate surface;
- (b) printing the solder paste comprising a lubricant additive through the stencil, wherein the lubricant additive is a branched chain fatty alcohol or fatty acid comprising 8 to 50 carbon atoms with a minimum of 4 carbon atoms being present in the shorter alkyl chain, or ester thereof; and
- (c) removing the stencil from the substrate surface.

Claims 2-7 (cancelled)

Claim 8 (original): The method as set forth in claim 1 wherein the branch point of the lubricant additive is at the second carbon position.

Claim 9 (original): The method as set forth in claim 8 wherein the lubricant additive is selected from the group consisting of 2-butyl-1-octanol, 2-butyl-1-decanol, 2-hexyl-1-octanol, 2-hexyl-1-decanol, 2-hexyl-1-dodecanol, 2-octyl-1-dodecanol, 2-decyl-1-tetradecanol, 2-butyloctanoic acid, 2-butyldecanoic acid, 2-hexyldecanoic acid, 2-hexyldodecanoic acid, 2-octyldodecanoic acid, 2-decyltetradecanoic acid and 2-hexadecyleicosanoic acid.

Claim 10 (original): The method as set forth in claim 8 wherein the lubricant additive comprises:

- an ester of a fatty alcohol, and
- a fatty acid, a dibasic acid or a tribasic acid.

Claim 11 (original): The method as set forth in claim 10 wherein the lubricant additive ester is a stearate, an oleate, a palmitate, an isostearate, an adipate, a trimellitate, a thiodipropionate or an pentaerythritol ester.

Claim 12 (original): The method as set forth in claim 1 wherein the solder paste comprises about 75% to about 95% by weight of a solder powder.

Claim 13 (original): The method as set forth in claim 1 wherein the solder powder comprises about 85% to about 90% by weight of a solder paste.

Claims 14 and 15 (cancelled)

Claim 16 (original): The method as set forth in claim 12 wherein the solder powder is an alloy composition selected from the group consisting of SnPb alloys, SnPbBi alloys, SnBi alloys, SnPbAg alloys, SnAgCu alloys, SnAgCuBi alloys and SnZnBi alloys.

Claims 17 and 18 (cancelled)

Claim 19 (original): The method as set forth in claim 1 wherein the solder paste comprises about 0.1 to about 2% by weight of the lubricant additive.

Claim 20 (original): The method as set forth in claim 1 wherein the solder paste comprises a polar organic solvent that is a polyhydric alcohol selected from the group consisting of ethylene glycol, diethylene glycol, propylene glycol, sorbitol, pentaerythritol and derivatives thereof, tri(propylene glycol) butyl ether, butyl diglyme, dibutyl itaconate, di(propylene glycol) butyl ether, 2-ethyl hexyl diglycol, γ -butyrolactone, hexyl carbitol, N-methyl pyrrolidone, N-ethyl pyrrolidone, terpineol and tetraglyme.

Claims 21-24 (cancelled)

Claim 25 (original): A solder paste comprising a solder powder and a non-aqueous vehicle, wherein the non-aqueous vehicle comprises a lubricant additive which is a branched chain fatty alcohol or fatty acid comprising 8 to 50 carbon atoms with a minimum of 4 carbon atoms being present in the shorter alkyl chain, or an ester thereof.

Claim 26 (original): The solder paste as set forth in claim 25 wherein the branch point of the lubricant additive is at the second carbon position.

Claim 27 (original): The solder paste as set forth in claim 26 wherein the lubricant additive is selected from the group consisting of 2-butyl-1-octanol, 2-butyl-1-decanol, 2-hexyl-1-octanol, 2-hexyl-1-decanol, 2-hexyl-1-dodecanol, 2-octyl-1-dodecanol, 2-decyl-1-tetradecanol, 2-butyloctanoic acid, 2-butyldecanoic acid, 2-hexyldecanoic acid, 2-hexyldodecanoic acid, 2-octyldodecanoic acid, 2-decyltetradeconoic acid and 2-hexadecyleicosanoic acid.

Claim 28 (original): The solder paste as set forth in claim 25 wherein the lubricant additive comprises:

an ester of a fatty alcohol, and
a fatty acid, a dibasic acid or tribasic acid.

Claim 29 (original): The solder paste as set forth in claim 28 wherein the lubricant additive is a stearate, an oleate, a palmitate, an isostearate, an adipate, a trimellitate, a thiodipropionate or a pentaerythritol ester.

Claim 30 (original): The solder paste as set forth in claim 25 wherein the solder powder comprises about 75% to about 95% by weight of a solder paste.

Claim 31 (original): The solder paste as set forth in claim 25 wherein the solder powder comprises about 85% to about 90% by weight of a solder paste.

Claims 32 and 33 (cancelled)

Claim 34 (original): The solder paste as set forth in claim 25 wherein the solder powder is an alloy composition selected from the group consisting of SnPb alloys, SnPbBi alloys, SnBi alloys, SnPbAg alloys, SnAgCu alloys, SnAgCuBi alloys and SnZnBi alloys.

Claims 35 and 36 (cancelled)

Claim 37 (original): The solder paste as set forth in claim 25 wherein the lubricant additive comprises about 0.1 to about 2% by weight of the solder paste.

Claim 38 (original): The solder paste as set forth in claim 25 wherein the non-aqueous vehicle comprises a polar organic solvent that is polyhydric alcohol selected from the group consisting of ethylene glycol, diethylene glycol, propylene glycol, sorbitol, pentaerythritol and derivatives thereof, tri(propylene glycol) butyl ether, butyl diglyme, dibutyl itaconate, di(propylene glycol) butyl ether, 2-ethyl hexyl diglycol, γ-butyrolactone, hexyl carbitol, N-methyl pyrrolidone, N-ethyl pyrrolidone, terpineol and tetraglyme.

Claims 39-42 (cancelled)